

**IN THE CLAIMS:**

Please amend the claims as follows:

Claims 1-8 (Cancelled).

9. (Withdrawn) The microfluidic device of claim 1 further comprising:  
a second reservoir for receiving a bolus of the drug therein; and  
an actuation device movable between a non-actuated position and an actuated position  
wherein the bolus of the drug is urged through the outlet needle and into the individual.

Claims 10-16 (Cancelled).

17. (Withdrawn) The microfluidic device of claim 10 wherein the body defines a  
second reservoir for receiving a bolus of the drug therein; and wherein the microfluidic device  
further comprises an actuation device movable between a non-actuated position and an  
actuated position wherein the bolus of the drug is urged through the outlet needle and into the  
individual.

19. (Cancelled)

20. (Withdrawn) The microfluidic device of claim 18 further comprising a docking  
station for supporting the output needle, the docking station being removably connected to the  
body.

21. (Currently Amended) A microfluidic device for delivering a drug to an individual, comprising:

a body defining a chamber having a fluid impermeable boundary and including a membrane for defining a reservoir, the membrane isolating the reservoir from the chamber;  
an output needle having an input in communication with the reservoir and an output receivable within the individual;

an aqueous solution selectively deposited in ~~injectable into~~ the chamber of the body through the fluid impermeable boundary;

an adhesive for affixing the body to the individual;

a pressure source including an hydrogel member received within the chamber and being expandable in response to communication with ~~exposure to~~ the aqueous solution deposited in ~~injected into~~ the chamber, the hydrogel member engageable with the reservoir and urging the drug from the reservoir through the output needle as the hydrogel member expands; and

a valve interconnecting the reservoir and the output needle, the valve movable between a non-actuated position wherein the valve prevents the flow of the drug from the reservoir to the output needle and an actuated position wherein the valve allows for the flow of the drug from the reservoir to the output needle.

22. (Cancelled)

23. (Cancelled)

24. (Previously Presented) The microfluidic device of claim 26 wherein the trigger includes a hydrogel post, the hydrogel post changing configuration in response to exposure to a predetermined condition in the physiological fluids.

25. (Withdrawn) The microfluidic device of claim 10 wherein the body defines a second reservoir for receiving a bolus of the drug therein; and wherein the microfluidic device further comprises an actuation device movable between a non-actuated position and an actuated position wherein the bolus of the drug is urged through the output needle and into the individual.

26. (Previously Presented) A microfluidic device for delivering a drug to an individual, comprising:

- a body defining a reservoir for receiving the drug;
- an output needle having an input in communication with the reservoir and an output receivable within the individual;
- an adhesive for affixing the body to the individual;
- a pressure source including an hydrogel member expandable in response to exposure to a predetermined physical property, the hydrogel member engageable with the reservoir and urging the drug from the reservoir through the output needle as the hydrogel member expands; and
- a valve defining a chamber and interconnecting the reservoir and the output needle, the valve movable between a non-actuated position wherein the valve prevents the flow of the drug from the reservoir to the output needle and an actuated position wherein the valve allows for the flow of the drug from the reservoir to the output needle, the valve including:
  - a flexible membrane for dividing the valve chamber into a drug flow portion and a trigger receiving portion; and
  - a trigger positioned within the trigger receiving portion of the valve chamber and having a first configuration with the valve in the non-actuated position and a second configuration with the valve in the actuated position; and
  - a first sensing needle having an input receivable in the individual and an output within the trigger receiving portion of the valve chamber, the first sensing needle allowing physiological fluids to pass from the individual to the trigger receiving portion of the valve chamber.

27. (Currently Amended) A microfluidic device for delivering a drug to an individual, comprising:

- a body defining chamber having a fluid impermeable boundary and including a membrane defining a reservoir for receiving the drug, the membrane isolating the reservoir from the chamber;
- an output needle having an input in communication with the reservoir and an output receivable within the individual;

an aqueous solution having a predetermined condition ~~physical property~~ and being selectively deposited ~~injectable~~ into the chamber of the body through the fluid impermeable boundary;

an adhesive for affixing the body to the individual;

a pressure source including an hydrogel member positioned in the chamber and being expandable in response to exposure to the predetermined condition ~~physical property~~ of the aqueous solution being selectively deposited ~~injected~~ into the chamber, the hydrogel member engageable with the reservoir and urging the drug from the reservoir through the output needle as the hydrogel member expands; and

a valve interconnecting the reservoir and the output needle, the valve movable between a non-actuated position wherein the valve prevents the flow of the drug from the reservoir to the output needle and an actuated position wherein the valve allows for the flow of the drug from the reservoir to the output needle.

28. (Cancelled)

29. (New) The microfluidic device of claim 21 wherein the aqueous solution is selectively deposited in the chamber by injection.

30. (New) The microfluidic device of claim 27 wherein the aqueous solution is selectively deposited in the chamber by injection